



ESTIMATED U. S. PETROLEUM BALANCE

SUMMARY

After three months of 4 percent average growth, total deliveries' rate of increase for October dropped to 2.0 percent due to greater-than-expected slackening in the rise of residual fuel oil deliveries and a decline for "other oils". Underlying growth, however, is likely still in the range of 3.5 to 4 percent. Gasoline and kerosine each continued to grow at a strong pace, while distillate deliveries rose only slightly.

Crude oil production continued to decline, with estimated production in the lower 48 reaching levels not regularly experienced since the 1950s. Though petroleum imports were still more than a million B/D above last October's levels, they slipped by about 850 thousand B/D from September's recent-year record as OPEC production cutbacks worked their way through the transportation system. Refinery utilization was up nearly 4 percentage points from last October, though with distillate stocks some 28 million barrels higher than a year ago, distillate production did not match last year's surge in output. Above-seasonal inventory building of prior months slackened in October, the roughly 9 million barrel increase in total stocks being about average for that month. Last October, stocks had declined contraseasonally.

PRODUCTS SUPPLIED^{1/}

Gasoline

ANOTHER STRONG INCREASE.

October gasoline deliveries continued the strong growth of recent months, rising nearly 4 percent (265 thousand B/D). Though roughly a percentage point lower than September's estimated increase (which may have overstated consumption gains), the increase was as large as for the summer driving season, tending to confirm that increased driving due to lower prices is continuing.

However, the picture is not entirely clear. With fuel efficiency of the fleet continuing to improve, increases in miles driven should be greater than increases in gasoline demand. Yet vehicle travel data show rises of only about 4 percent in recent months, implying gasoline demand growth of perhaps 2 percent.

Retail prices declined 2 to 3 cents per gallon in October, somewhat more than typical for that month, and were roughly 30 percent below last October's levels. Lower oil prices have also reduced the costs of petroleum-derived octane sources, of added importance as government-mandated phaseout of lead continues, to the detriment of ethanol blends. Performance of gasohol sales has varied greatly this year among regions, depending on differences in state tax exemptions and subsidies, public acceptance, and other factors. Overall, however, sales which had risen by a third nationally in 1985 to close to half a million B/D have tapered off this year. According to Federal Highway Administration data, 13 states accounting for about a third of 1985 gasohol sales experienced a nearly 7 percent decline for July.

Distillates

UP ONLY SLIGHTLY DESPITE COLDER WEATHER.

Despite weather colder than last year, distillate deliveries rose only 0.3 percent (10 thousand B/D). For the nation, October weather averaged about normal but was about 9 percent colder than for last year's warmer-than-average October. This, particularly with weather nearly 15 percent colder than last year in the Northeast, helped to add an estimated 60 thousand B/D to distillate use compared with last October. Increased use of on-highway diesel also likely added 40 to 50 thousand B/D to distillate demand, while other sectors as a group changed little. Though these factors pushed consumption higher, a move to fill nonprimary inventories last October and below-average interest in purchases for inventory this year masked most of the increase.

Even with colder-than-normal weather in major heating-oil-consuming regions, retail prices generally weakened in a month when prices have usually risen seasonally.

Residual Fuel Oil

GROWTH RATE SLIPS. The rate of increase in residual fuel oil deliveries has been slackening over the past several months; though for October this product still achieved a 13.7 percent, 143 thousand B/D increase, this was less than might be expected for a product whose third quarter rise had averaged over 30 percent. As in prior months, most of the activity was in the electric utility sector, a segment whose market share reached more than half of residual fuel oil deliveries during the summer. Seasonal declines in electricity demand from the summer peak have likely had a more-than-proportional impact on incremental fuels such as residual fuel oil, reducing purchase increases averaging nearly 350 thousand B/D during the summer to a probable 200-250 thousand B/D last month. With little change in either industrial or bunkering use, October's increase in residual fuel oil deliveries appears to be roughly 50-100 thousand B/D below what would be expected based on market segment data.

Kerosine Jet Fuel

RAPID RISE CONTINUES.

Second only to residual fuel oil as one of the fastest-growing major fuels this year, kerosine jet fuel deliveries rose 13.5 percent (141 thousand B/D) for October. Over the longer term, rapid growth in air traffic has caused kerosine jet fuel deliveries for the first ten months of the year to jump 37 percent since 1982, far above the 7 to 8 percent increases for gasoline and distillate over the same period and the 21 percent decline for residual fuel oil. Most of the growth is due to increased passenger traffic—both miles flown and revenue passenger miles have risen about 40 percent in four years, twice the rate of growth in cargo traffic.

Other Oils

WEAK IN OCTOBER.

Deliveries of other oils declined 4.3 percent (180 thousand B/D), continuing the weak performance of the past several months. Year-to-date, the decline has amounted to 1.3 percent. This year's 7 percent decline for the first eight months for natural gas liquids and liquefied refinery gases, which account for about 40 percent of "other oils", contrasts with results for last year. According to the recently-released *Sales of Natural Gas Liquids and Liquefied Refinery Gases*, sponsored in part by API, sales of these products rose 1 percent in 1985. Chemical uses, which account for a third of sales, rose more than 8 percent, while gasoline blending use (a sector not included in deliveries of "other oils" in order to avoid double counting with gasoline deliveries) increased 1.6 percent, in line with the growth in gasoline deliveries. Residential, commercial, and farm use, primarily propane, rose, while industrial and other uses fell.

(In millions of B/D)	OCTOBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	16.3	15.9	2.0	16.1	15.7	2.5
—Motor gasoline supplied	7.2	6.9	3.8	7.0	6.8	2.8
—Distillate fuel oil supplied	2.9	2.9	0.3	2.9	2.8	0.8
—Residual fuel oil supplied	1.2	1.0	13.7	1.4	1.2	18.3

SUPPLY^{1/}

Because of a 1,035 thousand B/D rise in petroleum supplies from outside the U.S., total supply increased 912 thousand B/D for October despite a 123 thousand B/D decline in domestic supply.

Production

LOWER 48 DROPS TO LEVEL OF 1950s.

Estimated crude oil production in the lower 48 sank to about 6.7 million B/D in October, a level not regularly experienced since the 1950s. Total U.S. production fell 333 thousand B/D or 3.7 percent year-to-year, the over-400 thousand B/D drop for the lower 48 only partially offset by a roughly 70 thousand B/D increase in Alaska. The Alaskan increase follows September's 90 thousand B/D decline due to temporary pipeline difficulties in that month.

This year's lower oil prices have resulted in sharply reduced drilling of new wells, cutbacks in well servicing and maintenance, deferral or cancellation of many enhanced recovery projects, and a higher rate of shut-ins and reduced economic life for marginal wells. As a result of rig activity down by 50 to 60 percent year-to-year in recent months, well servicing activity down by over 40 percent, and exploration and production spending down by at least 40 to 50 percent, production outside Alaska has been declining at an average rate of about half a million B/D per year.

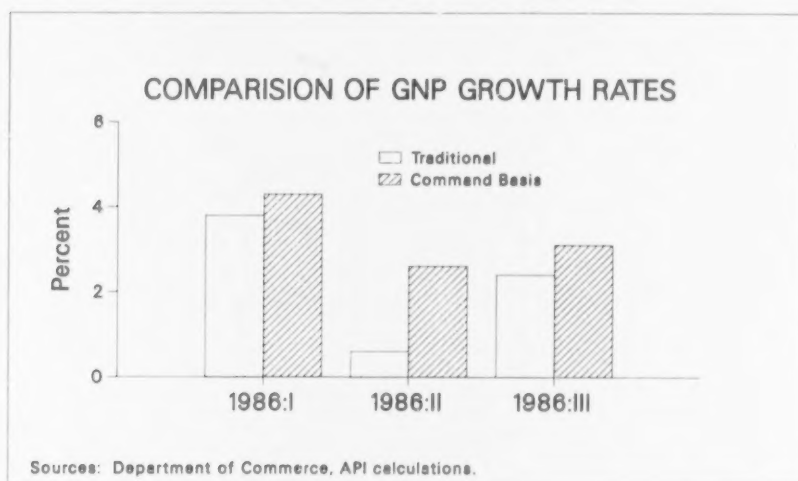
Imports

DOWN FROM SEPTEMBER, UP FROM LAST YEAR.

Total imports were still over a million B/D higher than last October, despite a drop of about 850 thousand B/D from September, as the effects of OPEC's September production cutback reached U.S. ports. Though shifts in inventory accumulation and drawdowns this year and last have distorted imports comparisons at times, October's increase is not out of line with what is needed to meet rising demand and to compensate for declining domestic production.

Still-growing residual fuel oil demand helped to increase imports of that product by 85 thousand B/D. Year-to-date, residual fuel oil has been the main contributor to the 112 thousand B/D increase in product imports.

The treatment of petroleum imports in measuring economic growth (see the July *Monthly Statistical Report*) has had a significant effect on the apparent variability of real GNP growth this year. According to the traditional GNP measure, the economy's growth rate dropped from 3.8 percent in the first quarter (annual rate from prior quarter) to 0.6 percent in the second, then rose to 2.4 percent (preliminary) in the third. When measured, instead, in terms of the economy's command over goods and services (which, other things equal, increases when import prices fall), swings in growth rates for 1986 are less dramatic. According to one method of calculation (which applies the gross domestic purchases deflator to "net exports"), the respective growth rates on a "command" basis were 4.3, 2.6, and 3.1 percent, respectively. As can be observed, the largest divergence between the two measures of growth occurred in the second quarter, when import prices were changing most rapidly because of falling oil prices. (The data used here do not incorporate the third quarter GNP revision due for release today.)



Refinery Operations

UTILIZATION RISES BUT DISTILLATE OUTPUT FALLS.

Refinery utilization as a percent of operable capacity continued in the low 80s in October, up by almost 4 points from last October. Though gasoline production rose nearly 6 percent year-to-year, distillate declined about 4 percent. This divergence reflects in part stronger demand growth for gasoline than for distillate, currently-ample distillate supplies, and the fact that last October's distillate production had surged to the highest October level in six years.

Inventories

STOCK-BUILDING MODERATES.

The greater-than-seasonal inventory building that has been typical since late spring slowed in October. From the end of April through September, primary inventories had increased 136 million barrels, about 100 million barrels above the typical pattern of recent years, as buyers took advantage of this year's lower prices and easy availability of crude. Imports' decline from September's recent-year high helped to reduce October's build to a near-average 9 million barrels. Crude oil stocks rose 12 million barrels, while product stocks declined slightly. Though distillate stocks rose only marginally during October, a month when they have typically risen 6 to 9 million barrels in anticipation of the coming heating season, end-of-month stocks were still nearly 28 million barrels above last October's level.

SUPPLY^{1/}

(In millions of B/D)	OCTOBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	17.3	16.4	5.6	17.1	16.1	6.6
—Crude production ^{2/}	8.6	9.0	(3.7)	8.8	9.0	(1.8)
—Crude oil imports ^{3/}	4.3	3.2	33.0	4.0	2.9	36.6
—Product imports	1.9	1.9	(1.4)	1.9	1.8	6.2

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 508 million barrels as of October 31, 1986).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	OCTOBER			YEAR-TO-DATE		
	1986 ¹	1985 ²	% Change	1986 ^{3R}	1985 ²	% Change
Products Supplied:						
Total motor gasoline	7,162	6,897	3.8	7,032	6,841	2.8
Finished leaded motor gasoline*	2,195	2,412	(9.0)	2,222	2,458	(9.6)
Finished unleaded motor gasoline*	4,967	4,485	10.7	4,810	4,383	9.7
Naphtha-jet	189	217	(12.9)	208	216	(3.7)
Kerosine-jet	1,182	1,041	13.5	1,092	984	11.0
Distillate fuel oil	2,911	2,901	0.3	2,865	2,841	0.8
Residual fuel oil	1,185	1,042	13.7	1,378	1,165	18.3
All other oils ⁴	3,964	4,144	(4.3)	3,807	3,857	(1.3)
Reclassified ⁵	- 324	- 298	8.7	- 328	- 245	33.9
Total domestic products supplied	16,269	15,944	2.0	16,054	15,659	2.5
Exports	752	690	9.0	747	741	0.8
Total products supplied	17,021	16,634	2.3	16,801	16,400	2.4
Supply:						
Domestic production:						
Crude oil ⁶	8,637	8,970	(3.7)	8,808	8,972	(1.8)
Natural gas liquids	1,525	1,610	(5.3)	1,589	1,597	(0.5)
Other supply ⁷	1,005	710	41.5	792	745	6.3
Total domestic supply	11,167	11,290	(1.1)	11,189	11,314	(1.1)
Imports:						
Crude oil, total	4,280 ^{10/}	3,218 ^{10/}	33.0	4,019 ^{10/}	2,943 ^{10/}	36.6
Canadian	538	480	12.1	541	463	16.8
Other	3,742	2,738	36.7	3,478	2,480	40.2
Products, total	1,856	1,883	(1.4)	1,926	1,814	6.2
Residual fuel oil	626	541	15.7	634	481	31.8
Other	1,230	1,342	(8.3)	1,292	1,333	(3.1)
Total imports	6,136	5,101	20.3	5,945	4,757	25.0
Total supply	17,303	16,391	5.6	17,134	16,071	6.6
Stock change, all oils	+ 282	- 243	XXXX	+ 333	- 329	XXXX
Refinery Operations						
Input to crude oil distillation units	12,871	12,363	4.1	12,811	12,060	6.2
Operable capacity	15,594	15,733	(0.9)	15,511	15,664	(1.0)
Refinery utilization (%) ⁸	82.5%	78.6%	5.0	82.6%	77.0%	7.3
Crude oil runs	12,722	12,209	4.2	12,703	11,904	6.7
Stocks (millions bbls.)	1986			1985 ²	% Change from ...	
	Oct. 31 ⁹	Sep. 30 ⁹		Oct. 31	Previous Month	Year Ago
Crude oil ^{10/}	347.0	335.2 ^{r/}		313.7	3.5	10.6
Unfinished oils	103.7	97.8		107.2	6.0	(3.3)
Total motor gasoline**	221.2	230.2 ^{r/}		213.9	(3.9)	3.4
Finished leaded motor gasoline*	63.2	68.9		71.5	(8.3)	(11.6)
Finished unleaded motor gasoline*	121.1	122.7 ^{r/}		108.6	(1.3)	11.5
Naphtha-jet	6.9	6.2		6.7	11.3	3.0
Kerosine-jet	43.1	43.2 ^{r/}		35.6	(0.2)	21.1
Distillate fuel oil	151.2	150.0		123.4	0.8	22.5
Residual fuel oil	47.8	43.6		50.4	9.6	(5.2)
All other oils	205.8	211.7 ^{r/}		154.8	(2.8)	32.9
Total all oils	1,126.7	1,117.9 ^{r/}		1,005.7	0.8	12.0

1/ Based on API estimated data converted to a monthly basis.

2/ Source: U.S. Department of Energy.

3/ Source: January-August, U.S. Department of Energy, September-October, API.

4/ Includes crude losses.

5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.

6/ Includes lease condensate.

7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.

8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."

9/ Derived by interpolating API weekly stocks data.

10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.

R/ Revised.

* Included in motor gasoline.

** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.